National Institute of Environmental Health Sciences

Using NASA data and models to improve heat watch warning systems for decision support

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Abstract:

Presentation. Extreme heat events are the number one cause of weather related fatalities in the United States. The current system of alert for extreme heat events does not take into account intra-urban spatial variation in risk. The purpose of this study is to evaluate a potential method to improve spatial delineation of risk from extreme heat events in urban environments by integrating sociodemographic risk factors with estimates of land surface temperature derived from thermal remote sensing data. Results: Comparison of logistic regression models indicates that supplementing known sociodemographic risk factors with remote sensing estimates of land surface temperature improves the delineation of intra-urban variations in risk from extreme heat events. Conclusions: Thermal remote sensing data can be utilized to improve understanding of intra-urban variations in risk from extreme heat. The refinement of current risk assessment systems could increase the likelihood of survival during extreme heat events and assist emergency personnel in the delivery of vital resources during such disasters.

Source:
http://weather.msfc.nasa.gov/conference/public_health_sf/PDF%20Day2%20morning/johnson_roses_09152011.pdf

Resource Description

Communication: ☑

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☑

audience to whom the resource is directed

Health Professional

Early Warning System: ☑

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure : ☑

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat

Geographic Feature: ☑

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

United States

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Injury

Intervention: ☑

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified